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EXAMINER	
HUYNH, SON P	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/547,474	SANDERS, MARK	
	Examiner	Art Unit	
	Son P. Huynh	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/01/05*
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/13/2005 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-73 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 34-50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 34-50 recite a program storage media that stores computer executable instruction per se with no pre- or post processing by a device thereupon. The claimed subject matter fails to produce a useful, concrete or tangible result because the storage medium with instruction for executing a process is an abstract idea. Furthermore, the storage medium could be, for example, a human memory that stores computer executable instruction for executing a process.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-5, 7-37, 39-63, 65-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noritomi (US 6,473,902) in view of Ong (US 5,815,662).

Regarding claim 1, Noritomi teaches a process of propagating viewing assets (video programs) to a system of video servers (figure 1), the process comprising:
copying a missing portion (program in "not copied" status/ not cached in the cache server – figure 4) of a replica of a selected viewing asset to a target video server (cache

server 5- figure 1) in response to determining that a priority to propagate the selected asset to the target server is higher than a retention value of a replica of one or more viewing assets stored on the target server (if a desired program is not save in the cache server 5, control PC 1 delivers a copy demand signal for demanding a copy of the desired program to the main server 4 for "not copied" program – col. 3, line 50-col. 4, line 4. The demanding for copy of the program is sent in order of priority –col. 2, lines 33-44; col. 5, lines 50-60, figures 10-11,17. When the hard disk 51 in the cache server 5 consumes up the copy area, less significant ones of the program (lower retention value), stored in cache server 5, are deleted to free space for new copy – col. 10, line 40-67). However, Noritomi does not specifically disclose a propagating priority representing a predicted economic value and the retention value.

Ong discloses removing the oldest in time, lowest priority data block (title that has unused –col. 5, lines 1-5) to free a section of the memory buffer for storing data block that has higher priority (e.g. top 10 Movies of the week) – col. 4, lines 35-42; col. 4, line 65-col. 5, line 15). Since the lower priority level/unused program stored at the media server is deleted to save space for higher priority level data transferred to the server (e.g. top 10), the data is propagated to the media server in response to determining that a propagation priority representing a predicted economic value (reads on the ranking of video program according to popularity. i.e., "Top 10 MOVIES of the Week") of propagating the selected asset to the target server is higher than a retention value (i.e., lowest priority data block or unused data blocks) representing a predicted economic

value of retaining a replica of one or more viewing assets stored on the target server (predicted economic value is low for oldest in time or unused title since the title is unused/less user request for it). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noritomi to use the teaching as taught by Ong in order to maximize utilization of all available bandwidth in network server and storage capabilities such that greatest number of viewer clients can receives continuous streaming media upon demand with a lowest amount of network hardware costs, and furthermore, to manage the peak use data loadings by efficient data scheduling by the network server (col. 2, lines 18-34; col. 3, lines 10-21).

Regarding claim 2, Noritomi teaches copying the missing portion comprises writing a missing of the replica of the selected asset onto a storage region of the target video server on which is already stored the replica of one or more viewing assets (control PC 1 deletes less significant ones of the program which already stored in the cache server 5 and writes new program to the cache server 5- col. 10, lines 40-67).

Regarding claim 3, Noritomi further teaches selecting a portion of the replica of one or more viewing assets in response to the replica of one or more viewing assets having a data size at least as large as a data size of the missing portion of the selected asset (select deletion candidate to be deleted to free space that large enough to save new program- col. 10, lines 55-67 and figures 13-16).

Regarding claim 4, Noritomi further teaches copying the missing portion (program that is not save in cache server 5) of the replica of a selected asset includes copying the missing portion from main server 4 (figure 1).

Regarding claim 5, Noritomi further teaches assigning propagation priorities to a plurality of viewing assets (assigning number, urgent, normal- figure 10);
ranking the viewing assets according to the assigned priorities (ranking 1-15 or Urgent, normal – figure 10);
selecting an asset in response to the asset having a rank higher than a preselected minimum rank (the "not copied" programs are selected in order, the number to the top has higher priority than the number at the bottom, and is selected to copy before the number at the bottom of the file– figures 10-11 and col. 9, lines 1-23).

Regarding claim 7, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 5. Ong further discloses media server is configured to handle request for media programs from a plurality of clients in a given service area (col. 3, lines 45-55). The system generates "top 10" list and provides data to a particular media server during peak time (col. 6, lines 1-40). Necessarily, Ong discloses determining local priority (priority at the media server) to have replicas of associated assets on particular video servers (determining what programs are frequently requested (i.e., top 10 movies) at particular media server during particular local time – i.e. peak time), the local priorities depending on the states of the particular video servers (i.e., peak time based on

particular media server in particular service area – col. 3, lines 45-55; col. 6, lines 1-19). Therefore, it would have been obvious to one of ordinary skill in the art to modify Noritomi to use the teaching as taught by Ong in order to reduce traffic loading during peak time (col. 7, lines 15-25).

Regarding claim 8, Noritomi further teaches the portion of replica of one or more viewing assets consists of replicas of asset elements belonging to one or more Elists (deletion candidate list – col. 10, line 50- col. 11, line 48).

Regarding claim 9, Noritomi further discloses deletion of less significant ones of the program stored in cache server 5 (col. 10, line 55). As a result, the portion has higher priority than the deleted ones become less significant ones of the program. Thus, Noritomi teaches updating retention values of replicas of viewing assets remaining on the target server in response to the copying of the missing portion of the replica of the selected viewing asset.

Regarding claim 10, Noritomi further discloses copying/selecting video programs from main server to cache server and transmitting the video program to user (col. 4, lines 30-39; col. 6, lines 55-62). Thus, Noritomi discloses selecting viewing assets, the viewing assets include video files for at least one of movies, news emissions, and shopping emissions.

Regarding claim 11, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 1. Ong further discloses a copy of data block stored on the media server shared by copies of video program provided to multiple users (col. 2, lines 40-59; col. 4, lines 10-17) reads on the feature of " a replica of an asset element shared by replicas of two assets on the target server". Therefore, it would have been obvious to one of ordinary skill in the art to modify Noritomi to use the teaching as taught by Ong in order to save space in memory and furthermore, minimizing of accesses to the data storage device and reduce data traffic loading and costs (col. 3, lines 10-15; col. 7, lines 16-25).

Regarding claim 12, Noritomi teaches a process for propagating digital viewing assets to video servers (figure 1), the process comprising:
assigning to each of a plurality of viewing assets a priority of propagating the asset onto video servers (assigning number, urgent, normal- figure 10);
ranking the viewing assets based on the assigned priorities (ranking 1-15 or Urgent, normal – figure 10);
propagating to one or more selected video servers those assets having a preselected minimum rank (propagating to cache server those assets having a preselected minimum rank such as normal-not copied, urgent-not copied – figure 10). However, Noritomi does not specifically disclose a propagating priority indicative of an economic value of propagating the asset onto video servers.

Ong discloses a propagating priority indicative of an economic value of propagating the asset onto video servers (a propagating priority, based on popularity of program/frequently requested program, onto media servers and remove unused program stored at the media server to free space for receiving new popular program onto the media server- col. 3, lines 10-22; col. 4, line 10-col. 5, line 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noritomi to use the teaching as taught by Ong in order to maximize utilization of all available bandwidth in network server and storage capabilities such that greatest number of viewer clients can receives continuous streaming media upon demand with a lowest amount of network hardware costs, and furthermore, to manage the peak use data loadings by efficient data scheduling by the network server (col. 2, lines 18-34; col. 3, lines 10-21).

Regarding claim 13, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 12. Ong further teaches assigning a viewing asset to a usage class (priority level such as high priority, top 10, low priority –col. 4, lines 18-42), the usage class providing a portion of an initial value for propagating priorities associated with assets assigned to the class (the period of retention of data blocks in the server's memory buffer (RAM) is determined on a predictive basis using a ranking of video programs (Titles) according to popularity, such as "Top 10 Movies of the Week" maintained in a Statistical Table – col. 4, line 37-42).

Regarding claim 14, Ong further teaches accumulating usage data on individual assets stored on the video servers (track Titles usage across time and generates a statistical table -col. 6, line 1-19); Ong also discloses the chart can be built on a dynamic basis during a day or peak period of a day (col. 6, line 66-col. 7, line 25), and the system tracks Titles usage across time and generates a statistical table which represents a "Top 10" type of list and provides Priority list according to the Title usage (col. 6, lines 1-19). As a result, the propagation priorities are updated based on the usage data.

Regarding claim 15, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 13. Neither Noritomi nor Ong specifically discloses encoded digital video assets and encoded digital audio assets. Official Notice is taken that encoding audio and video is well known in the art. For example, encoding audio and video for transmission in a transport stream. Therefore, it would have been obvious to one of ordinary skill in the art to modify Noritomi and Ong to use the well-known teaching in the art in order to reduce bandwidth required to transmit the digital data.

Regarding claim 16, Ong further discloses the system tracks Title usage across time. Ong also discloses the number of requests during peak Prime Time hours (col. 6, lines 1-57). As a result, the usage data includes data indicative of viewer demand (numbers of viewer requests during predetermined periods such as peak Prime Time hours, or programs that the user frequently request and programs that are unused) and data indicative of change in viewer demand (differences between numbers of viewer

requests during earlier and later predetermined periods or which program the user frequently request and which program is unused to determined popular programs and unused programs).

Regarding claim 17, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 14. Ong further discloses the system tracks Title usage across time and generates a statistic table, which represents a "Top 10" type of list. Based upon this Top 10 list, it can be projected that a #1 Title will have more requests then a #30 Title (col. 6, lines 1-57). Necessarily, the propagation priority a particular asset (Title) in the usage class (MOVIE) is updated based on a difference between the usage level of the usage class and a usage level of the particular asset determined from the accumulated usage data.

Regarding claim 18, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 13. Noritomi further discloses "global priority" (priority to copy program from main server to cache server col. 9, lines 62-col. 10, line 15) and "local priority" (priority to transmit program from cache server to user (col. 8, line 65-col. 9, line 10). Furthermore, Ong discloses the "local priority" is met by the priority to transmit data from media server to users (col. 5, lines 30-65), and the system tracks Title usage across time and generates a statistic table, which represents a "Top 10" type of list. Based upon this Top 10 list, it can be projected that a #1 Title will have more requests then a #30 Title (col. 6, lines 1-57). Apparently, the propagation priority the one of assets is

calculated. However, neither Noritomi nor Ong specifically disclose the priority is calculated from a global priority to propagate one of the assets and local priority to propagate a replica of the asset. It would have been obvious that the priority is calculated from a global priority and local priority in order to target the data to particular destination thereby reduce cost in data transmission.

Regarding claim 19, Ong further teaches streaming a replica of the copied one of the assets from the particular video server (memory of media server 10- figure 1) to a television of viewer in response to receiving a request to deliver the asset from the viewer (col. 4, lines 44-67).

Regarding claim 20, Noritomi teaches a process of propagating viewing assets to a video storage, the process comprising:
assigning propagating priorities to viewing assets (figure 10);
constructing a table of elements deletion lists for a target video storage (construct space allocation file 124 – col. 10, line 51-col. 11, line 40 and figure 13);
selecting a group of element deletion lists from table, the group having a data size at least as large as a data size of a portion of a replica of another asset not stored on the target storage (select a group of programs from file 124 and delete to free space that is large enough to store new program transmitted from main server 4- col. 10, line 40-col. 11, line 40);

copying the portion of the replica of the another asset onto the target video storage (cache server 5- figure 1) in response to the propagation priority of the another asset being larger than a retention value of the group (copying desired program from main server 4 to cache server 5 in response to order provided in copy files – col. 11, line 50- col. 12, line 39, and figures 10-17). However, Noritomi does not specifically disclose propagating priorities being predictive of an economic value associated with propagating an asset.

Ong discloses propagating priorities being predictive of an economic value associated with propagating an asset (high propagating priorities for popular programs/top 10 movies which being predicted of frequently request, are transmitted and stored at the media server – col. 3, lines 10-22; col. 4, lines 10-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noritomi to use the teaching as taught by Ong in order to data traffic loading and thereby reduce the cost of the system (col. 7, lines 15-25; col. 3, lines 10-15).

Regarding claim 21, Noritomi further teaches copying the portion of the replica comprises writing the portion onto a region of the target video storage previously storing the group (write the new data onto less significant data stored in portion of the cache - col. 10, lines 40-60).

Regarding claim 22, Noritomi further discloses constructing a space allocation file 124 for selection of less significant ones of the video programs stored in the hard disk 51. The controller 16 selects as a "deletion candidate" a group of the video programs which are less significant in the priority or transmitted later as defined by the copy file 123 to be deleted to free space for new copies- col. 10, line 40-col. 11, line 64). Necessarily, Noritomi teaches the selecting a group includes constructing a table that lists sets of element deletion lists (space allocation file 124) with lower retention value than the propagation priority of the another asset (new copy).

Regarding claim 23, Noritomi further teaches selecting a group includes picking one of the lists having a data size at least as large as the portion of the replica of the another asset (select deletion candidate to be deleted and examine whether or not the delete area is greater than the area required for saving copies of the video programs on the hard disk 51-col. 10, line 40-col. 11, line 64).

Regarding claim 24, Noritomi further discloses deletion candidate is selected according to significant in the priority- and if the space area is not enough to save the copies, additional deletion is performed to free space for new data received from the main server (col. 10, line 40-col. 11, line 64). As a result, after copying, the data has priority next to the deleted data shift to the low priority level and will be added to deletion list if more space is required. Therefore, the table of element deletion lists (file 124) is updated after copying the portion of the replica of the another asset.

Regarding claim 25, the limitations as claimed correspond to the limitations as claimed in claim 11 and are analyzed as discussed with respect to the rejection of claim 11.

Regarding claim 26, Noritomi teaches a process of distributing viewing assets to viewers (col. 4, lines 65-67), comprising:
assigning priorities to assets, the priority for distributing the associated to video server accessible to viewers (cache server 5- figures 1, 10; and col. 3, lines 40-65; col. 12, lines 30-39);
selecting a video server (selecting cache server 5- col. 3, line 46-col. 4, line 19, and figure 6);
copying one of the assets onto the video server in response to determining that the priority associated with the one of the assets is greater than a retention value (priority value) associated with a set replicas of viewing assets stored on the video server, the replicas occupying enough space to store the one of the one of the assets (col. 10, line 40-col. 11, line 64). However, Noritomi does not specifically discloses priority being predictive of an economic value associated with distributing the associated asset, and the retention value being predictive of an economic value of retaining the set to replicas.

Ong discloses priority being predictive of an economic value associated with distributing the associated assets to video servers accessible to viewer (priority being predictive of multiple users likely to request for popular programs- Col. 3, lines 5-15; col. 4, lines 35-

42), therefore, priority being predictive of high economic value; a unused program (predictive of low economic value) is removed from the media server to save space for higher priority data – col. 4, line 60-col. 5, line 5); and retention value being predictive of an economic value of retaining the set of replicas (low priority program/unused program (being predictive as low economic value since no one request for it) is not retained at the media server (col. 4, line 60-col. 5, line 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noritomi to use the teaching as taught by Ong in order to maximize utilization of all available bandwidth in network server and storage capabilities such that greatest number of viewer clients can receives continuous streaming media upon demand with a lowest amount of network hardware costs, and furthermore, to manage the peak use data loadings by efficient data scheduling by the network server (col. 2, lines 18-34; col. 3, lines 10-21).

Regarding claim 27, Noritomi further discloses the controller 16 selects, as a "deletion candidate" a group of the video programs with are less significant in the priority. The deletion candidate is checked and listed in the space file 124 and then deleted – col. 10, line 50-col. 11, line 64). Necessarily, copying one of the assets includes searching for one or more sets of replicas of asset elements to delete (searching for deletion candidate) from a table of element deletion lists (file 124).

Regarding claim 28, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 26. Ong further discloses remove the oldest-in-time, lowest priority data block to free a section of the memory buffer if the memory is full, the period of retention of data blocks in the server's memory buffer (RAM) is determined on a predictive basis using a ranking of video programs (Titles) according to popularity, such as "Top 10 Movies of the Week" maintained in a Statistical Table (col. 4, lines 20-42). Necessarily, the retention value is updated in response to anticipated changes in viewer request levels for assets. Therefore, it would have been obvious to one of ordinary skill in the art to modify Ong to use the teaching as taught by Ong in order to provide desired data to user.

Regarding claim 29, Ong further teaches accumulating data on usage of individual ones of the assets (Title), the updating the retention value based at least in part on the accumulated data (determining priority level of data stored at the media server is updated based on user demand- col. 5, line 30-col. 6, line 18).

Regarding claim 30, Noritomi further teaches an interactive television system, comprising:

a communication channel selected from the group consisting of a network and a bus (channel selected to transmit data between devices located at different locations - figures 1,6);

a plurality of video servers as claimed read on cache servers 5a, 5b, 5c and main server 4 – figures 1, 6);

a control unit (control PC 1a, 1b) connected to the video servers (servers 4, 5a, 5b, figure 6) and configured to control copying of a missing portion of a replica of a selected asset to one of the video servers in response to priority of propagating the selected asset onto the target server being higher than value of retaining a replica of one or more other assets already stored on the one of the servers (transmit data that is not saved in the cache server to the cache server and replace lower priority level data stored at the cache server with data that has higher priority level transmitted from the main server (figures 1, 6, col. 3, lines 45-65; col. 10, line 40-col. 11, line 64). However, Noritomi does not specifically copying of missing portion in response to an economic value of propagating the selected asset onto the target server being higher than an economic value of retaining a replica of asset already stored on the server.

Ong discloses copying of missing portion in response to an economic value of propagating the selected asset onto the target server being higher than an economic value of retaining a replica of the data already stored on the server (providing popular data/frequently request data (high economic value since multiple user likely request for it) on to media server to replace the lower priority level data/unused data (low economic value) stored at the media server (col. 4, line 18-col. 5, line 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noritomi to use the teaching as taught by Ong in order to maximize utilization of

all available bandwidth in network server and storage capabilities such that greatest number of viewer clients can receives continuous streaming media upon demand with a lowest amount of network hardware costs, and furthermore, to manage the peak use data loadings by efficient data scheduling by the network server (col. 2, lines 18-34; col. 3, lines 10-21).

Regarding claim 31, Ong further discloses the control unit (e.g. server manager) is configured to record usage data for the assets stored on each of the local video storage (col. 5, line 15-col. 6, line 19; col. 7, lines 59-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noritomi to use the teaching as taught by Ong in order to enhance future services such as reducing data traffic loadings on system drives (col. 7, lines 15-17).

Regarding claim 32, Noritomi further discloses caches server 5 transmits requested program to users in order according to playback file 121 (col. 4, line 65-col. 5, line 21). Noritomi further disclose the system comprises plurality of cache server 5 (figure 6 and col. 3, lines 52-59); and each cache serve has a database file, copy file and playback files (figure 6). Thus, the system comprises a plurality of distribution networks to provide channels for delivering viewing assets to viewer televisions, each distribution network connected to a subset of the video servers.

Regarding claim 33, Ong further discloses the control unit (e.g. server manager) is configured to accumulate usage data on viewing assets from the video server (col. 5, line 15-col. 6, line 19; col. 7, lines 59-65).

Regarding claims 34-37, 39-50, the limitations as claimed are directed toward embodying the process of claims 1, 3-5, 8-9, 12-14, 16-18, 20, 22-23, 25 respectively in "program storage media storing executable instructions". It would have been obvious to embody the procedures of Noritomi as discussed with respect to claims 1, 3-5, 8-9, 12-14, 16-18, 20, 22-23, 25 in a "program storage media storing executable instructions" in order that the instructions could be automatically performed by a processor.

Regarding claim 51, Noritomi teaches a process for propagating digital viewing assets to video servers (cache servers 5 – figures 1, 6), the process comprising: propagating a plurality of viewing assets (video programs) to video servers (cache server 5) based on propagation priorities for propagating the viewing assets, the priorities providing a ranking of the assets (figures 10-11 and col. 5, line 50-col. 6, line 20; col. 12, lines 29-39). However, Noritomi does not specifically disclose the priority providing a ranking of the assets on the basis of predicted economic values associated with propagation of the asset, accumulating usage data on individual ones of the assets; and updating the priorities based on the usage data.

Ong teaches priority providing a ranking of the assets on the basis of predicted economic value associated propagation of the asset (e.g., high priority of propagation is set for popular data/frequently request data (high predicted economic value) – col. 4, lines 18-col. 5, line 5);
accumulating usage data on individual assets stored on the video servers (track Titles usage across time and generates a statistical table -col. 6, line 1-col. 7, line 25); Ong also discloses the chart can be built on a dynamic basis during a day or peak period of a day (col. 6, line 66+), and the system tracks Titles usage across time and generates a statistical table which represents a "Top 10" type of list and provides Priority list according to the Title usage (col. 6, line 1-col. 7, line 25). As a result, the propagation priorities are updated based on the usage data. Therefore, it would have been obvious to one of ordinary skill in the art to modify Noritomi to use the teaching as taught by Ong in order to target program to user in the future thereby reduce the cost of data transmission (col. 3, lines 10-22).

Regarding claims 52-53, the limitations as claimed correspond to the limitations as claimed in claim 13 and 18 respectively and are analyzed as discussed in the rejection of claims 13 and 18.

Regarding claim 54, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 53. Noritomi further discloses "global priority" (priority to copy program from main server to cache server col. 9, lines 62-col. 10, line 15). Ong further discloses

a Priority List comprises program name and number of accesses (col. 6, line 20-col. 7, line 7). Necessarily, the "global priority" is based in part on a counter value, the counter value measuring usage of the selected one of the assets (number of accesses of the program name).

Regarding claim 55, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 53. Noritomi further discloses "local priority" (priority to transmit program from cache server to user (col. 8, line 65-col. 9, line 10). Furthermore, Ong discloses the "local priority" is met by the priority to transmit data from media server to users (col. 5, lines 30-65). However, neither Noritomi nor Ong specifically disclose the local priority is based in part on a bandwidth for streaming the selected one of the assets from the one of the video servers to a set of viewers. Official Notice is taken that provide priority based in part on a bandwidth for provide selected signal from server to user is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noritomi and Ong to use the well-known teaching in the art in order to data to most valuable viewers.

Regarding claims 56-58, 60-61, 67-68, 70-73, the limitations as claimed correspond to the limitations as claimed in claims 1-5, 9-10, and 12-15 respectively and are analyzed as discussed in the rejections of claims 1-5, 9-10, and 12-15.

Regarding claim 59, Noritomi further teaches copying the missing portion from storage device (hard disk 41-figure 1).

Regarding claim 62, Noritomi further teaches constructing a table of elements deletion lists for the target device (construct space allocation file 124 for disk 51– col. 10, line 51-col. 11, line 64 and figure 13);
selecting a group of element deletion lists from table, the group having a data size at least as large as a data size of a portion of a replica of another asset not stored on the storage of a target device (select a group of programs from file 124 and delete to free space that is large enough to store new program transmitted from main server 4- col. 10, line 40-col. 11, line 64);

Regarding claim 63, Noritomi further discloses plurality of cache server 5 and video program is transmitted to particular cache server (figure 6). Necessarily, target device (target disk 51) is selected to be a target video asset device.

Regarding claim 65, the limitations as claimed correspond to the limitations as claimed in claim 7 and are analyzed as discussed with respect to the rejection of claim 7.

Regarding claim 66, Noritomi further teaches the portion of a replica of one or more viewing assets includes replicas of asset elements belonging to one or more element deletion lists (figure 16).

Regarding claim 69, the additional limitation as claimed correspond to the additional limitation as claimed in claim 15, and are analyzed as discussed with respect to the rejection of claim 15.

7. Claims 6, 38 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noritomi (US 6,473,902) in view of Ong (US 5,815,662) as applied to claims 5, 63 above, and further in view of Jacobi et al. (US 6,064,980).

Regarding claim 6, Noritomi in view of Ong teaches a process as discussed in the rejection of claim 5. Noritomi further discloses "global priority" (priority to copy program from main server to cache server col. 9, lines 62-col. 10, line 15). However, Noritomi does not specifically disclose the determining the propagation priorities based at least in part of global priorities.

Jacobi teaches determining the propagation priorities based at least in part of global priorities (determining the of programs, e.g. books, movies, games, etc. col. 4, lines 9-12, displayed in startup list 64 to user based on worldwide rating of the program – startup list 64 only lists currently most popular programs- col. 6, line 66-col. 7, line 9). Therefore, it would have been obvious to one of ordinary skill in the art to modify Noritomi and Ong to use the teaching as taught by Jacobi in order to improve efficiency in services.

Regarding claim 38, the limitations as claimed are directed toward embodying the process of claim 6 in "program storage media storing executable instructions". It would have been obvious to embody the procedures of Noritomi as discussed with respect to claim 6 in a "program storage media storing executable instructions" in order that the instructions could be automatically performed by a processor.

Regarding claim 64, the limitations as claimed correspond to the limitations as claimed in claim 6 and are analyzed as discussed with respect to the rejection of claim 6.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ueno et al. (US 6,438,596) discloses video on demand system that presents users with a selection list of proposed videos for which server and network resources are available to immediately server the selected video.

Burns et al. (US 6,324,182) discloses full based, intelligent caching system and method.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P. Huynh whose telephone number is 571-272-7295. The examiner can normally be reached on 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher C. Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300

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SPH
August 17, 2005

HAI TRAN
PRIMARY EXAMINER